Proposed Approvals of the San Joaquin Valley and South Coast 8-hour ozone

Air Quality Plans

U.S. EPA Fact Sheet

Summary

"California's air quality has improved dramatically since the Clean Air Act was approved by Congress more than forty years ago," said Jared Blumenfeld, EPA's Regional Administrator for the Pacific Southwest. "Today the Golden State is making a commitment to use clean technologies to solve the air quality challenges faced in the San Joaquin Valley and South Coast."

- EPA is proposing to approve the 8-hour ozone air quality plans for the San Joaquin Valley (SJV) and South Coast (SC) areas in California. These plans, known as the State Implementation Plans (SIPs), are the roadmaps to meeting the 1997 8-hour ozone National Ambient Air Quality Standards (NAAQS) of 0.08 ppm by 2024. The NAAQS are set by the U.S. EPA to protect public health.

Ozone and Public Health

- Ozone pollution can cause inflammation and irritation of respiratory airways, coughing, shortness of breath, reduced lung function, asthma symptoms and increased hospitalizations for respiratory cases. Children and elderly are most impacted by ozone pollution.
- Ground-level ozone is formed when nitrogen oxides (NOx) and volatile organic compounds (VOCs) react in the atmosphere in the presence of sunlight. NOx and VOCs are called ozone precursors. Motor vehicle exhaust, industrial emissions, and chemical solvents are the major sources of these chemicals. Ozone pollution is a concern especially when the weather conditions needed to form it, lots of sun and hot temperatures, occur.
- These two areas suffer from some of the worst air quality in the country due to a number of factors, such as meteorology, geography, climate and weather. However, air quality in most of the SJV and SC has improved over the last ten years. For instance, the worst air quality locations in the SJV and SC have improved 6% and 23%, respectively, with many locations having even greater air quality improvements.

Today's Proposed Action

- EPA's proposed approvals of the 8-hour ozone air quality plans for the SJV and SC include:
    - Attainment demonstrations, including enforceable commitments and reductions from new technologies
    - Emissions inventories
    - Reasonable further progress demonstrations
    - Reasonably available control measures demonstrations
    - Contingency measures for progress and attainment
    - Transportation conformity budgets

- These plans demonstrate that, by 2024, pollution will be reduced to the level needed to attain the 1997 8-hour ozone standard of 0.08 ppm.
    - For the SJV to attain by 2024, NOx will have to be reduced by 75% and VOCs by 25% from 2002 levels.
    - For the SC to attain by 2024, NOx will have to be reduced by 90% and VOCs by 52% from 2002 levels.
- Numerous new near-term state and district rules associated with these plans will reduce air pollution.
    - In the SJV, statewide measures such as the in-use truck and off-road diesel rules, and smog -check improvements will reduce air pollution. District rules reduce pollution from confined animal feeding operations, biosolids composting, open burning, and boilers, among other sources.
    - In the SC, statewide measures such as the in-use truck and off-road diesel rules, marine vessel rules, and smog-check improvements will reduce air pollution. District rules reduce pollution from solvents, lubricants, boilers and furnaces, among other sources.
- The Clean Air Act (CAA) also allows areas such as the SC and SJV (designated and classified as "extreme" nonattainment under the CAA) to rely on the development and implementation of new and improved technologies given the relatively long time between SIP development and attaining clean air.
- In their 8-hour ozone plans, roughly 12% of the needed NOx reductions in SJV and 26% of the needed NOx reductions in SC reductions are attributed to new and improved technologies. The SC also attributes 9% of the needed VOC reductions to new and improved technologies. Examples of the combined efforts to develop new technologies include:
    - The Clean Air Technology initiative - The EPA, California Air Resources Board, South Coast Air Quality Management District and San Joaquin Valley Air Pollution Control District have signed an agreement and are working cooperatively to develop the needed new technologies.
    - Air Quality Improvement Program (AQIP) – AQIP expands California's portfolio of air quality incentives to include projects that do not fit into the framework of statutory programs. For example, in 2009-2010 AQIP spent over $20 million for accelerating deployment of new hybrid medium and heavy duty truck vehicles.
    - The EPA along with the SC and SJV air districts have provided funding to projects to help spur early-stage, innovative technologies that need further testing and demonstration prior to deployment and commercialization. One project has funded the purchase of zero-emission electric delivery trucks, which will replace 28 UPS delivery diesel trucks with zero-emission medium-duty trucks. This will further the effort to deploy cleaner engines on a large scale to end-users who may be considering retaining or rebuilding their old diesel vehicles.
    - Other state agencies, such as the CA Energy Commission (CEC), invest considerable funds in innovative technologies. For instance, CEC's AB118 Alternative and Renewable Fuel and Vehicle Technology Program aims to develop and deploy alternative and renewable fuels and advanced transportation technologies to help meet

the state's goals for reducing greenhouse gas emissions. Approximately $100-$120 million per year over the next 7 years will fund projects that develop and improve alternative and renewable low-carbon fuels.

SJV Reasonably Available Control Technology (RACT)

- In a separate but related action, EPA is proposing partial approval and partial disapproval of San Joaquin's demonstration that the area has imposed all reasonably available control technology (RACT) on all large commercial and industrial air pollution sources. The partial disapproval identifies nine activities where EPA has not yet confirmed RACT for the area, but which the agencies are working to adequately address in the next few months.

Next Steps

- EPA is providing a 30-day public comment period on its 8-hour ozone proposed actions. The agency has a consent decree deadline to take final action by December 15, 2011.

For More Information:

http://www.epa.gov/region9/air/actions/ca.html

News Releases from Region 9

EPA Paves Way for New Ozone Plans for Nation's Worst Two Air Quality Zones

California's San Joaquin Valley and South Coast get roadmaps to achieving federal Clean Air Act's 8-hour ozone standard

(9/8/11) SAN FRANCISCO – With the continuing goal of improving air quality for millions of Californians, the U.S. Environmental Protection Agency is proposing to approve the 8-hour ozone air quality plans for the San Joaquin Valley and South Coast areas. These plans, known as State Implementation Plans, are the roadmaps to meeting the Clean Air Act standard of 0.08 parts per million of ozone as measured in 8-hour increments.

"California's air quality has improved dramatically since the Clean Air Act was approved by Congress more than forty years ago," said Jared Blumenfeld, EPA's Regional Administrator for the Pacific Southwest. "Today the Golden State is making a commitment to use clean technologies to solve the air quality challenges faced in the San Joaquin Valley and South Coast."

The air districts are making steady progress toward meeting the 8-hour ozone standard, one of the National Ambient Air Quality Standards, by 2024. In 1997, EPA first established the 8-hour ozone standard, which replaced the older 1-hour ozone standard (0.12 ppm). The 8-hour standard is more protective of human health because it addresses the impacts of exposure over longer periods of time.

EPA is proposing to approve the 8-hour ozone air quality plans for the San Joaquin Valley and South Coast, which include their attainment demonstrations, enforceable commitments and reductions from new technologies.

There have been vast improvements in air quality in California over the previous decades. The worst sites in California have demonstrated a 52% improvement in ozone from 1976 to 2010, a 29% improvement in fine particulate matter (PM2.5) from 2001 to 2010, an 84% improvement in carbon monoxide from 1970 to 2009, and a 92% improvement in sulfur dioxide from 1970 to 2009.

In both areas, statewide measures such as the in-use truck and off-road diesel rules, and smog-check improvements will further reduce air pollution. In the San Joaquin Valley, district rules will reduce pollution from open burning, boilers, composting, and livestock operations. In the South Coast, the marine vessel rules and district rules targeting pollution from solvents, lubricants and boilers will reduce ozone pollution.

Ground-level ozone is formed when nitrogen oxides (NOx) and volatile organic compounds (VOCs) react in the atmosphere in the presence of sunlight. NOx and VOCs are called ozone precursors. Motor vehicle exhaust, industrial emissions, and chemical solvents are the major sources of these chemicals. Ozone pollution is a concern especially when the weather conditions needed to form it—lots of sun and hot temperatures—occur. Ozone pollution can irritate airways, worsen asthma symptoms and increase hospitalizations for respiratory cases. Children and the elderly are most impacted by ozone pollution.

EPA is providing a 30-day public comment period on its 8-hour ozone proposed actions. For more information, please visit: http://www.epa.gov/region9/air/actions/ca.html

Questions and Answers (INTERNAL)

1. Why should we be concerned about ozone?

Ozone pollution is of concern because inhalation can cause inflammation and irritation of respiratory airways, coughing, shortness of breath, reduced lung function, asthma symptoms and increased hospitalizations for respiratory causes. Children and elderly are most impacted by ozone pollution.

2. Where does ozone come from?

Ground-level ozone is formed when nitrogen oxides (NOx) and volatile organic compounds (VOCs) react in the atmosphere in the presence of sunlight. NOx and VOCs are called ozone precursors. Motor vehicle exhaust, industrial emissions, and chemical solvents are the major sources of these chemicals. Ozone pollution is a concern especially when the weather conditions needed to form it, lots of sun and hot temperatures, occur.

3. Isn't air quality in SC and SJV some of the worst in the nation?

Yes, these two areas suffer from some of the worst air quality in the country due to a number of factors, such as meteorology, geography, climate and weather. However, air quality in most of the SJV and SC has improved over the last ten years. For instance, ambient ozone concentrations in the most severely polluted locations in the SJV and SC have declined by 6% and 23%, respectively, with many locations having even greater air quality improvements.

4. What do you mean by 'new technologies' (black box) and why is the amount of emission reductions attributed to these technologies so large? Is there a limit to how big this commitment can be?

The CAA's section 182(e)(5) new technology provision allows "extreme" 8-hour ozone nonattainment areas to assign emissions reductions to technologies which are anticipated to be developed, or improvements to existing control technologies.

The CAA does not limit the size of the commitment for new technologies. The only explicit requirements are that, 1) reductions needed from the new technologies are not used to demonstrate progress in the first 10 years and, 2) the State has committed to submit contingency measures to be implemented if the reductions are not achieved through development of new technologies.

5. Shouldn't we be relying more on existing technologies that can be used to reduce emissions?

The SC and SJV districts have adopted numerous rules that require implementation of existing control technologies, including many advanced control technologies. Both districts are also evaluating additional new technologies that have not yet been commercialized.

6. The SJV base year emissions inventory of NOx has been revised downward by 12%. Is that not significant enough to require new air quality modeling and a new attainment target?

In the 2011 Ozone SIP Revisions, CARB revised the 2002 base year NO_x emissions downward by 12% based on improved inventory methodologies and data. The primary change was an improved inventory for the natural gas burning equipment sector. We are proposing to find that CARB's commitment in the 2007 State Strategy adequately addresses the potential effects of these inventory improvements on the attainment demonstration.

The 2007 Plan's air quality modeling shows that a 75% reduction in NO_x emissions from 2002 levels is needed to attain the 8-hour ozone standard in the SJV, *i.e.*, to reach a target level of 160 tpd of NOx based on the unrevised base year inventory. EPA believes that a 75% reduction from the revised

2002 base year inventory provides the best currently available estimate of the NO_x reductions needed to reach attainment, *i.e.,* a target level of 141 tpd of NOx based on the revised base year inventory. CARB also recognizes that a reduction of up to 75% from the revised base year level may be necessary to attain the 1997 8-hour ozone standard in the SJV and has reaffirmed its 2007 State Strategy commitment to achieve all emissions reductions that are necessary to provide for attainment.

In addition, CARB has committed to update the modeling analysis supporting the SJV 2007 Ozone Plan to reflect these emissions inventory improvements and other new information by December 31, 2014.

7. How does this decision account for the relocation of the ozone monitor at Arvin-Bear Mountain Road to Arvin-DiGiorgio?

The ozone monitor at Arvin-Bear Mountain Road site shut down on November 4, 2010. Since the monitor was operating throughout the entire high ozone season of 2010 and we used the data from that site in our analysis, our evaluation is unaffected by the relocation of the Arvin site from Bear Mountain Road to DiGiorgio Road.

Additional background: Accurate characterization of the air quality in the San Joaquin Valley is one of EPA's top priorities. It is important to ensure that the relocation of the Arvin-Bear Mountain Road ozone monitor meets EPA's regulatory requirements. If a monitoring agency must relocate a monitor due to circumstances beyond its control, EPA regulations require that the agency submit a justification for its conclusions that the relocation does not compromise data collection needed for implementation of a NAAQS, and that the replacement site represents generally the same air quality conditions (*i.e.,* the "same scale of representation") as the previous site. CARB has not yet submitted a request to relocate the ozone monitor at Arvin-Bear Mountain Road, nor has it submitted the required analysis to justify its closure. Therefore, to date EPA has not approved the relocation or closure of this monitoring site.

8. What are some examples of rules that will help attain?

The following three measures will alone reduce NOx emissions by over 80 tons per day by 2023. They include: Ship Auxiliary Engine Cold Ironing & Clean Technology, Cleaner Main Ship Engines and Fuel, and the Clean Up Existing Harbor Craft.

In the SJV, the majority of the emissions reductions needed for attainment will come from engine standards for heavy duty diesel trucks and for a variety of off-road diesel equipment including agricultural equipment and most types of construction and industrial equipment. CARB's in-use truck and bus rule and in-use off-road engine rule will reduce NOx emissions by 19 tpd by 2023.